

USAWC STRATEGY RESEARCH PROJECT

HUMAN RESOURCE AUTOMATION ARCHITECTURE
VALIDATION FOR A TRANSFORMING ARMY

by

Colonel Patrick Devine
United States Army

Colonel Elton Manske
Project Adviser

This SRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 18 MAR 2005		2. REPORT TYPE		3. DATES COVERED -	
4. TITLE AND SUBTITLE Human Resource Automation Architecture Validation For a Transforming Army				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Patrick Devine				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army War College, Carlisle Barracks, Carlisle, PA, 17013-5050				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT See attached.					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 33	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

ABSTRACT

AUTHOR: COL Patrick Devine

TITLE: Human Resource Automation Architecture Validation For A Transforming Army

FORMAT: Strategy Research Project

DATE: 3 March 2005 PAGES: 33 CLASSIFICATION: Unclassified

This paper will recommend specific steps to transform the disconnected elements of the United States Army Human Resources System. These steps, if taken, will result in better support to United States Army members while expediting access to commander's key information requirements and decreasing the workload of service providers. These improvements will depend on the creation of an integrated architecture (Network-centric) with one lead agent in charge of developing, maintaining, and growing the architecture. Other recommendations will simplify users' system input requirements. The final recommendation is to establish a cell that monitors users' performance and identifies user's that require assistance/training.

TABLE OF CONTENTS

ABSTRACT.....	iii
ACKNOWLEDGEMENTS	vii
HUMAN RESOURCE AUTOMATION ARCHITECTURE VALIDATION FOR A TRANSFORMING ARMY .	1
PROBLEMS	2
TECHNOLOGY.....	2
FUNCTIONS VERSUS PROCESSES	2
SUPPORT TO COMMANDER’S INFORMATION REQUIREMENTS.....	4
ABILITY TO IMPLEMENT RAPID MODIFICATIONS	4
INTERNET RELIANCE.....	5
UNLEVERAGED TECHNOLOGY	5
COMMON ACCESS CARD (CAC)	6
TACTICAL PERSONNEL SYSTEM (TPS).....	6
MICROSOFT OUTLOOK.....	7
DISCONNECTED SYSTEMS	7
CASUALTY OPERATIONS	7
IN AND OUTPROCESSING	8
PERSONNEL ELECTRONIC RECORDS MANAGEMENT SYSTEM (PERMS)	8
STRENGTH ACCOUNTABILITY.....	9
FUTURE ENVIRONMENT	9
DEFENSE INTEGRATED MILITARY HUMAN RESOURCE SYSTEM (DIMHRS)	9
ARMY BATTLE COMMAND SYSTEM (ABCS).....	10
ELECTRONIC HUMAN RESOURCES SYSTEMS (EHRS)	11
RECOMMENDATIONS	11
HUMAN RESOURCE SYSTEMS ARCHITECTURE MANAGEMENT	12
CORE TASKS	12
CONCLUSION	15
ENDNOTES	17
GLOSSARY	21
BIBLIOGRAPHY	23

ACKNOWLEDGEMENTS

This paper is dedicated to the Officers, Noncommissioned Officers, Enlisted Soldiers, Civilians and Contractors that encompassed the G1/Adjutant General Directorate, 7th Infantry Division and Fort Carson during the years 2002 through 2004. These people represent the very best in Human Resource Management and the Adjutant General Corps. They are a small microcosm of the professional Human Resource Managers throughout the Army. These people persevered from the beginning of the Global War on Terrorism making systems work that were never tested by the harsh reality of a true full mobilization, deployment and operation.

Although there are too many to list individually, the following is a list of the key leaders:

LTC Roger Wood	Major Angie Odom
Major Jim Speegle	Major Angie Holbrook
Major Ed Nazario	1LT Lindsey Condrey
1LT Angela Chard	1LT Leisle Hammond
2LT Bonnie Imperiale	CW3 Parks
CW2 Al Hughes	CW2 Stump
SGM Mike Cillo	SFC James Scott
SFC Robinson-Toney	SGT Jennifer Moore
SGT Roxanne Brown	Mr. Rafael Santos
Ms. Marlyce Haagenson	Mr. Danny Wellis
Mr. Tom Grady	Ms. Dawn McCarty
Ms. Deryline Watts	

Additionally, I am grateful for the support provided by Mr. Alex Arlington - AG School, MAJ Theresa Campbell - Field Systems Directorate - Human Resources Command and COL Elton Manske of the Army War College.

HUMAN RESOURCE AUTOMATION ARCHITECTURE VALIDATION FOR A TRANSFORMING ARMY

The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so we must think anew, and act anew. We must disenthrall ourselves, and then we shall save our country.

—Abraham Lincoln

The Army is transforming while prosecuting the global war on terrorism. “[O]ur Nation is at war and we are...an Army at war.... As an Army at war, we must adjust our priorities.... In a world where the strategic environment is transformed, we should be prepared to even reexamine our fundamental way of thinking.”¹

General Schoomaker became the Army’s 35th Chief of Staff on 1 August 2003. He immediately received a mandate from Secretary of Defense Rumsfeld to “focus the Current Force to win the war on terrorism.”² This focus on near-term objectives switched the Army’s direction set by former Army Chief of Staff, General Eric K. Shinseki.³ General Schoomaker, however, retained the one premier tenant of transformation which remains constant in all transformation reviews - “Schoomaker said the top priority is people. First is the Soldier. He is the centerpiece of our system.”⁴

This paper will focus on the support tools that human resource managers use to manage the Army’s most critical resource - people. From this point forward, I will use the Army’s new terminology for personnel - Human Resource.

Human resource support (HRS) encompasses the following functions: manning the force, personnel support, and personnel services. These activities include personnel accounting, casualty management, essential services, postal operations, and morale, welfare, and recreation. They are provided to service members, their families, DA civilians, and contractors.⁵

This analysis will concentrate on improving automation tools throughout the Human Resource Management areas. Continual decreases in human resource authorizations intensify the need to ensure that Human Resource Automation works properly and effectively. Reliance on automation also increases the importance that automation support keeps pace with policy changes and requirements. This paper will conclude with proposed solutions to migrate the current Human Resource Automation Systems into an architecture that supports the transforming force while implementing key programs and policies to ensure continued success in the future.

PROBLEMS

TECHNOLOGY

Before one can understand the problems inherent within the Human Resource Automation Architecture, it is imperative to understand the origin of the Architecture. Many people will argue about the exact date when computers were first introduced as a management tool. Most, however, will agree that the Wang Corporation introduced the personal computer in April 1972.⁶ In 2005, it is difficult to believe that people operated with single computers and these computers were not networked.

Understanding the infancy stages of computers helps explain how current Army Human Resource Support tools developed separately within stovepipe architectures that appear poorly designed by today's standards. As new technologies improved, system developers frequently concentrated on resolving small issues of immediate concern. They rarely solved issues by reviewing the total impact on Soldiers, Commanders, the whole United States Army and potentially all services. This notion provides the first Army Human Resource Automation Architecture major problem: Lack of a single entity (organization/command) to maintain architecture integrity or an automation architecture process.

FUNCTIONS VERSUS PROCESSES

As computer use within the Army's Human Area matured, it remained stove-piped and disconnected. Eventually the human resource automation systems required users to support them as opposed to the systems supporting the users. In order to accomplish one process users must input information into multiple separate systems. The current deployment process is an illustration of this issue. Users must interface with four separate (unconnected) systems to successfully deploy a person from an installation. The systems include:

- Mobilization Level Application Software (MOBLAS) and Deployment and Readiness Tracking System (DARTS): Before deployment, individual's Soldier Readiness Processing (SRP) status must be checked within DARTS. MOBLAS is the original system required for documenting Soldier Readiness Program (SRP) processing requirement status. It has since been replaced by DARTS. "The SRP requires commanders to maximize Soldier readiness by identifying and correcting nondeployment conditions. Personnel processing requirements include checking the status of individual Soldier readiness during in-processing, at least once annually, during out-processing, and within 30 days before an actual unit deployment date or the date a Soldier departs on a TCS move."⁷

- United States Army Forces Command (FORSCOM) is responsible to “train, mobilize, deploy, sustain and reconstitute combat ready forces to meet Combatant Commander’s requirements across the spectrum of current and future operations.”⁸ FORSCOM has directed installations to use DARTS to document deploying individual’s SRP status prior to deployment.⁹ Regrettably, the current version of the DARTS is not a part of the Human Resource Management Automation Architecture. It extracts data from current systems, but does not update or output to any systems. Equally frustrating, the system does not project deployability, it only reports current qualifications.
 - The future plan for the system is to maintain SRP data on the Common Access Card (CAC).¹⁰ “CAC is a mandated initiative that will use smart card technology to contain the following business applications; Personnel Identification, Building Access, and Network Access.”¹¹ Placement of SRP information on individual CAC cards will provide current information at the individual Soldier level; however, it will still fail to provide SRP data integrated within the Human Resource Automation Architecture.
- Army Personnel Tempo (PERSTEMPO): PERSTEMPO is defined “as any day away from home station.”¹² The PERSTEMPO application is currently a separate application that is accessed through Army Knowledge on Line (AKO).¹³ Personnel Operators must input a PERSTEMPO transaction for each deploying Soldier. Congress directed the tracking of PERSTEMPO within the FY 2000 National Defense Authorization Act.¹⁴ This is a reporting system that was developed to track high-deployment per diem. Within the eMILPO update for Commanders and Leaders, states that the plan is to move PERSTEMPO functionality into eMILPO.¹⁵
- Tactical Personnel System (TPS): “TPS provides the essential personnel functionality to support a commander’s tactical decision-making process by creating a deployable “go to war” personnel strength automation file.”¹⁶ TPS is mandated for use to manifest Soldiers deploying into the CENTCOM Theater. TPS provides a manifest function that scans the CAC barcode to produce a manifest. The manifest provides an output file that can be loaded into the Global Transportation Network (GTN). TPS also provides a separate data file for inprocessing people into gaining theaters.
- Electronic-Military Personnel Office (e-MILPO)/Enlisted Distribution and Assignment System (EDAS): Units are required to identify Soldiers deployed within the Non Available Deployment Tracking module of e-MILPO. This subsystem updates the Top of the System (TOS) to ensure the Soldier is not placed on assignment instructions.¹⁷

As illustrated above, multiple events require interface with four separate systems. Preferably, users should swipe an ID Card (CAC) at the manifest site to accomplish all accountability and in-transit visibility requirements. That swipe should confirm the Soldier is qualified for deployment. Once confirmed, the same transaction should generate the deployment update, add to the manifest, create a PERSTEMPO update, and all other required system updates.

SUPPORT TO COMMANDER'S INFORMATION REQUIREMENTS

Proponents of the Army Human Resource functions tend to focus on their specific function instead of the complete process. It is imperative to review the core personnel functions supported within the architecture to see the error of this approach. A common finding after every major deployment is that the personnel system fails to support the tactical commander's information requirements. An example of this is a finding from Operation Iraqi Freedom (OIF) Lessons Learned that there needs to be a system that tracks Army personnel through Blue Force Tracker or any other tactical command tracking system.¹⁸ There was also an issue attributed to the lack of an integrated or joint deployable personnel database.¹⁹

Another finding pertains to certain key requirements that are not automated within the Field System of the United States Army. The specific example provided is to automate the Personnel Accounting Reporting System.²⁰ Essentially, we have changed Strength Reporting requirements, but have not allocated the resources to modify the systems to accommodate the requirements. Technically, the Army no longer accounts for Soldiers on a daily basis. Duty Status is not systematically updated for each duty status change.

The Army community has created many different systems to compensate for voids within the architecture. Two examples are the Army Company Information System (ARCIS) and the Tactical Personnel System (TPS). The purpose of ARCIS is to automate the day-to-day administrative operations to support company level personnel.²¹ There is, however, no single proponent for Company Administration, resulting in a lack of use and requirements. Similarly, TPS was created to provide a stand-alone capability for deployed personnel until they could reconnect to the main personnel system.²² The manifest function, however, is the only feature consistently used within the system.

ABILITY TO IMPLEMENT RAPID MODIFICATIONS

Current technologies available in the civilian community encourage users to have an insatiable appetite for immediate responses. The Personnel Community moved their main systems to centralized applications. E-MILPO is web based. TPS is a program either

downloaded from the web or requested on compact disk. Despite the ability to rapidly implement changes, frequently a needed change takes too long to implement. One example is a change required for TPS to transfer data to TRANSCOM's Global Air Transportation Execution System (GATES). GATES changed their format, but TPS remained the same. This led to a requirement for personnel operators to manifest personnel within TPS, output the GTN formatted report, and then reformat the output to the GATES changed format. During the Army Personnel Leaders Conference (22 Sep 2003)²³, a decision was made to fund the change, however, the change was not implemented until 10 May 2004²⁴. Seven months may be acceptable for a legacy system under strict configuration management and phased implementation; however, in an Army prosecuting the Global War on Terrorism (GWOT), this is unacceptable. This was a GWOT validated requirement to a mandated system to manifest and a very simple software change.

Within a transforming Army, it is imperative that leaders ensure that automated system modifications coincide with policy or procedure changes. Failing to link implementation and the tools required is unacceptable in today's environment.

INTERNET RELIANCE

Many Human Resource support applications have either been moved to the web or were developed on the internet. There are many advantages to doing this, "...it eliminates the burden of complex administration, they're accessible from anywhere, and they are usable on multiple platforms."²⁵ There are also disadvantages. The disadvantages include who has access to data on the Internet. Hackers are prevalent and can either access or possibly manipulate data. The Internet also relies on communications and can be slower than a desk-top application.²⁶

The largest problem with Internet reliance is that tactical commanders have a mission to operate in areas that are frequently without robust communications availability. Additionally, communications capability will frequently be allocated to command and control operations instead of human resource information processing. This not only impacts the normal human resource internet applications, but also affects the self service applications for Soldiers within a deployed combat zone. This underscores the second major problem within the Human Resources Automation Architecture- Failure to provide a deployable/tactical capability with the ability to resynchronize with higher level databases.

UNLEVERAGED TECHNOLOGY

The computer age introduced a capability to access a lot of information rapidly. The growth of the Internet provides an enormous ability to access data, while significant

sophistication in miniaturization provides significant capabilities to store massive amounts of data. We now require a workforce that is able to operate computers, but they must also be able to understand data and be able to properly extract desired information from repositories. We need workers that are information literate and capable of extracting information when it is required.²⁷

As the Army purchases robust capabilities within systems, it is imperative that we fully leverage the available technologies. The Army must reexamine current technology to determine if full potential is obtained from existing systems. The following paragraphs will examine select examples of technologies available that are not fully exploited.

COMMON ACCESS CARD (CAC)

CAC is defined as a Personnel Identification application. It lacks, however, a signature that allows visual verification of a possessor's identity. The Department of the Defense started experimenting with smart card technology in Hawaii. One of the most notable federal smart card experiments was with the Multitechnology Automated Reader Card (MARC). The MARC experiments contained much more functionality than what is provided by CAC. A few samples of successful MARC experiments include Field Medical Documentation, Mobility/Readiness Process, Manifesting, Accountability, and Food Service Headcount.²⁸ CAC possesses the capability for these applications, however, support from proponents and investment in hardware applications is required. One of the prescribed DOD CAC functions is to provide the "principal card used to enable physical access to buildings and controlled spaces."²⁹ Access control to most DOD buildings, however, involves a separate pass and separate access control card.

TACTICAL PERSONNEL SYSTEM (TPS)

TPS was introduced earlier in this paper as the deployment accountability system to support the tactical commander's decision making process.³⁰ Current users mainly employ the manifest subsystem to account for personnel on transportation systems and provide output to TRANSCOM. The application also contains a variety of other subsystems.

TPS includes a personnel subsystem with screens that allow input of a variety of different types of personnel. It can be used for other services, civilians, prisoners of war, or Soldiers from other countries. The database can capture over 120 data elements which can be downloaded and updated. TPS also includes a Task Force Management Subsystem. This functionality enables users to create task forces by Unit Identification Code (UIC) or Social Security Number (SSN). Task Force data can be built and queried in a variety of manners.

Finally, TPS contains preformatted queries and an ad hoc query capability. All of the ad hoc queries can be saved to be executed at a later time.³¹

The Adjutant General Corps has a core functionality of accountability. With transformation, the Corps needs to reexamine its entire organization to focus on this core functionality. One of the major findings within the Abu Ghraib Prison Abuse investigation was no accountability for prisoners was maintained. "Detainee reporting lacked accountably, reliability and standardization. There was no central Agency to collect and manage detainee information."³² TPS already contains the capability to account for prisoners; it is a matter of establishing acceptable procedures to implement.

MICROSOFT OUTLOOK

The Army has standardized electronic mail processing under Microsoft Outlook. We have not, however, been able to establish an effective electronic process to complete personnel applications and requests through an electronic process (Electronic Forms/signatures). The biggest resistance is typically from commanders who prefer to use paper instead of the electronic medium. The advantages of electronic processing are enormous and provide a capability that is resident within products that have already been purchased by the Army. Progress within this area requires a cultural change in our senior leaders to accept use of technology. Younger generations have already adapted to the use of technology improvements.

DISCONNECTED SYSTEMS

The Army has many systems and many requirements; however there are also many opportunities to streamline processes through automation. Much of the connectivity void within the personnel system exists at the field level. Too frequently technology investment has been at the Department level, as opposed to the field where most of the information is generated. The following paragraphs will identify some samples of opportunities to increase productivity and service to customers by leveraging technology.

CASUALTY OPERATIONS

The war on terrorism has exercised the casualty system far more than any other time in decades. Previously, casualties were either peacetime deaths or very small hostile acts. Our recent experience in Iraq and Afghanistan has produced a significant number of dead and wounded Soldiers. The casualty system has been focused at the Department level, with very little functionality provided at the field level. The Defense Casualty Information Processing

System (DCIPS) generates casualty reports required for reporting to the Department of the Army/Defense, but does not provide a robust system to record and generate information for use by tactical and installation commanders. Moreover, DCIPS has little interface with other Department of the Army/Defense Personnel Systems.

Most field commanders desire a system that will track Soldiers that have been injured or wounded through their treatment. They also require a history file that tracks the deceased Soldiers and their family members. Commanders want to ensure that the family members of deceased Soldiers are not forgotten by their command and that they properly receive all their entitlements. Likewise, they desire the same tracking capability for the wounded Soldiers from their commands.

IN AND OUTPROCESSING

All installations have similar In and Out processing requirements, yet both processes require Soldiers to complete multiple forms that contain identical data elements. Most of these data elements are already resident within existing human resource systems. Instead of having Soldiers verify the data existing within the systems; each processing section typically requires the Soldier to repetitively write out the same information. Some installations have a good system, but there should be a standardized system used by all installations within the Army. This needs to be a system using data within the existing architecture and not separate systems

PERSONNEL ELECTRONIC RECORDS MANAGEMENT SYSTEM (PERMS)

The Army announced that it would eliminate field records (MPRJ- Military Personnel Records Jacket or 201 file).³³ The solution for moving these documents is reliance on PERMS. The implementation of this initiative requires review of two major issues. First, there is a perception that the Army has now placed a dependence on Soldiers to maintain documents personally, versus maintaining the documents within the Army. This is a weak arrangement as Soldiers rarely stay at one location for a long period of time. The new assignment policy may mitigate this issue, but it remains unrealistic for Soldiers to maintain these documents throughout a career. Frequently Soldiers move and store personal items in storage. The Army personnel community should not abrogate their responsibility to maintain records. Secondly, the documentation process for PERMS record content is convoluted. Access to PERMS documents requires a communication network capable of downloading significant amounts of data (image files). Most Soldiers will not have routine access to this capability. Moreover, the PERMS document selection screen is vague and does not provide sufficient detail to identify the precise document. Finally, there is no direct link between an individual Soldiers Records Brief

(Officer or Enlisted) and the documents within PERMS. The documents within PERMS should be accounted for and linked (electronically) to a Soldier's Records Brief.

STRENGTH ACCOUNTABILITY

Strength Accountability is one of the core Human Resource functions, yet it is not adequately supported within the automation architecture. Some of the problems are due to interfaces that do not properly work between other systems. Regardless, it should be a top priority to ensure the core human resource functions properly work within the architecture.

The Army normally fills units based on their Modified Table of Organization and Equipment (MTOE). This data is provided through The United States Army Force Management Support Agency (USAFMSA) from the Army Status of Resources and Training System (ASORTS).³⁴ The complex process of adding authorizations matched to UICs was carried over from the Standard Installation/Division Personnel System- 3 (SIDPERS-3). Although it is a very effective process the accuracy and the relationship between all data elements, is extremely difficult to monitor and very labor intensive.

Further complicating matters, a new subsystem was added to eMILPO in Jul 2004 to report non deployable status. Instead of modifying an existing field (Duty Status) or adding one field, a subsystem was created. It was fielded in eMILPO interim change package (ICP) 2.0.3.³⁵ The change focused on reporting data to the Department level instead of assisting the field user. Information is displayed on the Personnel Accountability Report (AAA-162). There is no roll-up by unit reflected within the ICP. This focus is reinforced within the eMILPO Functional Guidance where the reference for the functionality is AR 614-200 , Enlisted Assignment and Utilization Management³⁶ instead of the core personnel function captured in AR 220-1, Unit Status Reporting. Installations that I sampled, admit to depending on the AAA 162 (Unit Personnel Accountability Report) for USR and PAI.³⁷

FUTURE ENVIRONMENT

The future of the Human Resource Automation Architecture is defined within many different plans. The next pages will identify and address the major initiatives planned for the future.

DEFENSE INTEGRATED MILITARY HUMAN RESOURCE SYSTEM (DIMHRS)

DIMHRS is a system directed by Congress to use commercial off the shelf (COTS) applications to support all services manpower and personnel information. It was further expanded to include personnel, manpower, training and compensation.³⁸ "DIMHRS (Pers/Pay)

will subsume approximately 80 existing manpower, personnel and pay processing systems across the four Services and the Defense Finance and Accounting Service (DFAS).³⁹ At the high end, DIMHERS could include 10,000 users, 6,000,000 people to manage, 40 major systems and 100s of minor systems.⁴⁰

This is a significant challenge. The integration of just the Army Active, Reserve and National Guard will be arduous. The key issue will be to ensure that DIMHERS subsumes the functionality and does not add another system, that field users must manage, to provide information to leaders at Department of the Army.

ARMY BATTLE COMMAND SYSTEM (ABCS)

Personnel leaders' have debated Human Resource ABCS functionality since Force XXI experimentation started within the 4th Infantry Division. The Adjutant General school sponsored two experiments within the Force XXI environment to evaluate possible contributions to the future Army.

The first experiment (Manning) accounted for soldiers through a push system instead of a pull system. Restated, personnel operators would maintain accountability of deployed personnel by establishing a baseline of deployed personnel through the manifest process. The Army's Operational and Strategic level would use the baseline of personnel to determine unit strengths without requiring units to routinely report their personnel numbers. The links with manifesting everyone in and out of the theater would ensure that accountability is continually updated. The second experiment (medical tracking) would provide information on people moving through the medical system. Lastly, imbedding human resource functionality within ABCS, by tracking Soldiers on weapon systems, would provide situational awareness of personnel. This would require Soldiers to register themselves (swipe of CAC during pre-combat checks) which would be included within an icon within normal blue force tracking. Identification of human resources with a Global Positioning Satellite (GPS) device in a weapons system, would contribute to a reconfirmation of personnel accountability and identify when weapons systems become inoperable and possible associated casualties. This capability, where potential casualties could be identified prior to receiving reports, could be developed to obtain facts related to a casualty situation through automated means. It could contribute to casualty system information that must be supplemented through eye witness statements.

The manning experiment resulted in the approval of Warfighter Rapid Acquisition Program (WRAP) funds for the Tactical Personnel System. This one-time funding process provided scanners and software upgrades for the system. The plan included eventual integration within

SIDPERS-3.⁴¹ Now that eMILPO has replaced SIDPERS-3, personnel leaders need to ensure a capability exists for personnel operators to perform required tasks absent connectivity to the internet. Additionally, this capability must include the ability of an automated resynchronization once connectivity to the internet is established.

The second experiment involved the forerunner to the CAC- the MARC. The experiment used the MARC for Soldier tracking through medical facilities. Individual medics would carry a device that would register medical information (diagnosis and medication administered) to patient's identification card (CAC). As the patient traversed medical treatment, each treatment location would read the treatment provided off the Soldier's CAC chip. While this occurred, the reader would simultaneously send a location and status of the Soldier to the personnel system.

The Capstone Event of this experiment happened at the National Training Center in 1996. Regrettably, the hand-held computers issued to the Medics failed because the batteries would not hold a charge in the desert heat. Proponents from the Medical School and Adjutant General School agreed that the experiment demonstrated needed functionality and agreed to pursue further experiments.⁴²

ELECTRONIC HUMAN RESOURCES SYSTEMS (EHRS)

The Army has recently implemented a variety of web-based self service applications. These applications serve Soldiers well and provide near 24/7 access to their records and selected services. Personnel operators, however, must remember that many Soldiers may not have access to eHRS due to computer access or lack of connectivity.

RECOMMENDATIONS

The Human Resource Community is currently in a transition period where the senior leadership must make key decisions that will impact the Army's strategic posture for years to come. Historically, personnel operations depended on the initiative and resourcefulness of personnel operators to make the systems work. Rarely have the systems adapted to evolving requirements. In order to substantially improve both processes and results, Human Resource Senior Leaders must manage the Human Resource Automation Architecture. This requires a forcible adherence to make Human Resource Systems adapt to support all the evolving requirements of a transforming Army. The Army mandate to reduce support Soldiers authorizations in order to increase the combat forces must be factored in the resources dedicated to automation support. The following paragraphs will provide specific recommendations on how to affect this in the current environment.

HUMAN RESOURCE SYSTEMS ARCHITECTURE MANAGEMENT

The Human Resource Architecture is immense and expanding. There should be one centralized element responsible for architecture control and monitoring. It is imperative that automation is properly reviewed and focused around the Core Task of Manning. There needs to be a plan for the entire Human Resources Architecture. This plan must be a living document that grows with changes while anticipating future requirements. It is critical, however, that the organization maintaining the architecture is empowered to control the entire architecture. It can not be an organization that merely documents what occurs, but rather one that controls the architecture, interfaces, growth and changes.

Currently, there are two major organizations managing human resource automation. Field Systems Division within The Adjutant General Directorate and Personnel Information Systems Directorate within Human Resources Command. These two separate organizations should be combined to provide a holistic approach to managing the architecture. This cannot only be a reorganization on paper. The centralized organization must also be responsible and accountable for the complete Human Resources Automation Architecture. It must communicate with all users and implement needed changes within the architecture. This includes monitoring requirements and ensuring appropriate actions are being accomplished by the users. It must include a section responsible for data integrity and reporting on inaccuracies or failures to input information.

CORE TASKS

Once an organization is established to maintain the architecture, it is critical to validate the architecture and maintain it. The first step in validation is to ensure that the Core Personnel Tasks are properly supported within the system. The current FM 12-6 Personnel Doctrine) states the following tasks are critical to Combat operations: "Normally, only limited and critical HR functional tasks, such as personnel accountability, casualty operations, replacement operations, and postal functions, are performed in or near the battlespace."⁴³

One could argue that Manning the Army is the Core Personnel Function. Current Personnel Doctrine states that "Manning the force encompasses personnel readiness management, replacement management, casualty management and civilian personnel management."⁴⁴ The coordination draft of FM 1-0, Human Resource Doctrine (which will replace FM 12-6) states "Manning the force consists of personnel readiness management, personnel accounting, personnel information management and replacement operations management."⁴⁵

I would suggest that before defining Manning within a transforming Army, two critical decisions must be made. First, in light of current tracking limitations and anticipating future applications, tracking of individual Soldiers should be accomplished through automated means. If Soldiers are tracked electronically, there are a host of legal and moral issues that must be identified and addressed. If Soldier tracking is approved, then who is responsible for Soldier tracking? Is this a Human Resource or an Operational (G3) task? My recommendation would be that it is a shared task. Operations (or G3) must track units and combat operations, Human Resources/Personnel (G1) should track individuals.

Once the Personnel Automation Architecture is documented within a single organization in charge, there needs to be a review of the current systems and how they provide human resource service. The primary focus must be on Manning and ensuring that the systems meet the requirements while automating processes instead of functions.

The crux of the decisions must be the follow through. The Human Resource community can not maintain disconnected systems throughout. Centralized management of systems is required with the power to enforce user compliance. Compliance must be monitored and reported.

The following recommendations are provided

- Establish one agency, command or office responsible for the management, integration, and maintenance of the Human Resource Automation Architecture. This element must also monitor use/compliance of users within the system.
- Non-Internet Functionality with Resynchronization Capability: The functionality contained within TPS for providing deployed personnel accounting in a remote area needs to be validated. Once validated, the functionality of TPS (or a similarly functioning system) must be integrated within the architecture. TPS needs to download current information from either e-MILPO, Total Army Database, DIMHRS or any other main database holding Army-wide or DOD-wide Human Resource information. This integration must include a database replication capability where key deployment data elements are date stamped and updater identified. This capability must provide a resynchronization ability to reconnect TPS to the main system upon attainment of communications capability or mission completion.
- Rapid Response: Human Resource Automation must be responsive to the needs and requirements of the Soldiers and commanders. The architecture must be responsive enough to implement changes prior to requirements for field users to comply with changes. Information throughout the system must be monitored for compliance and accuracy.

Feedback must be provided to users on their data accuracy and compliance with Army or DOD standards.

- Process Management: All processes within the current Army Human Resource Management Automation Architecture require a review to ensure they are automated at the process level and not individual tasks. Efforts must be made to simplify input requirement for Personnel Operators in the field. This area includes:
 - Automation of Core Tasks Validation: The entire system must be validated to ensure the core tasks are properly automated. The first area would be accountability. The AG Corps must claim responsibility for personnel accountability. This includes all accountability within a Theater of Operations. Some examples include prisoners, patient, civilians, and contractors. Tactics, Techniques, and Procedures (TTPs) must document how to accomplish these tasks.
 - Integrating Fragmented Systems: All fragmented systems of the architecture must be reviewed for validity and, if valid, be integrated into the system. Priority must be placed on core human resource functions. MOBLAS, DARTS, and systems that support deployment and strength reporting must have priority for integration.
 - Leveraging Unused Capabilities: The Army has invested in capabilities that remain untapped. CAC, TPS, Microsoft Outlook, Microsoft Access etc all contain capabilities to simplify tasks and expedite processing.
 - Automation of Common Tasks: Many Army Human Resource support tasks are manual procedures. Instead of multiple manual submissions of identical information, automation solutions could significantly simplify these tasks with the use of standardized applications within existing software solutions. This can be an existing Army system or an Army owned system (Outlook, Access etc).
 - Training: We need to review all training within the personnel area. This includes Soldiers, NCOs, Officers, civilians and contractors. Basic level computer knowledge is a requirement.

The Defense Integrated Military Human Resources System (DIMHRS) is hailed as the silver bullet to resolve all Human Resource issues. The scope of the project, however, is immense and the prognosis of success is not very optimistic. The implementation of DIMHRS may be critical to the future; therefore Army senior leadership must ensure that implementation is smooth. Given the broad scope of DIMHRS and the associated difficulties to implement, it is important that DIMHRS is mature enough to replace systems and not become an additional system to maintain for users.

CONCLUSION

The Human Resource Community must adapt current processes and capabilities to properly support the transforming force. Fixing the Human Resource Management Automation Architecture is fundamental to Human Resource Transformation. The first step to implement this solution is to establish one office/headquarters with the responsibility and authority to maintain and integrate the architecture. Once this organization is established, the entire architecture must be reviewed to ensure that core Human Resource Functionality properly serviced within the architecture. Then the architecture must metamorphose to an architecture that leverages technology by ensuring that systems work for the user by simplifying tasks and reducing manual input. This migration must be accomplished with the understanding that commanders sometimes require the ability to process human resource information in remote areas that do not have consistent communications capability. None of these necessary system changes will occur overnight. Regardless, they all must be aggressively pursued and affected to the proper delivery of Human Resource Services to our most important Army resource - people.

WORD COUNT=5431

ENDNOTES

¹ Peter J. Schoomaker, "Opening Statement before the Committee on Armed Services, U.S. Senate." July 29, 2003; available from <<http://www.army.mil/leaders/CSA/testimony/29Jul03OpeningStatement.htm>>; Internet; accessed 3 Dec 2004

² Frank Tiboni, "Army Transformation Changes Direction." 13 Oct 2003, available from <<http://www.fcw.com/fcw/articles/2003/1013/cov-army-10-13-03.asp>>; Internet; accessed 6 December 2004.

³ CNN.com, US, "New Army Chief of Staff Sworn In." 1 Aug 2003, available from <<http://www.cnn.com/2003/US/08/01/army.chief/>>, Internet; accessed 6 Dec 2004.

⁴ Tiboni.

⁵ Department of the Army, *Combat Service Support*, Field Manual 4-0. (Washington D.C.: U.S. Department of the Army, 29 Aug 2003), 10-1

⁶ Ken Polsson, "Chronology of Personal Computers." 19 Nov 2004, available from <<http://www.islandnet.com/~kpolsson/comphist/comp1972.htm>> Internet, accessed 05 Dec 2004.

⁷ Department of the Army, *Personnel Processing (In-Out-, Soldiers Readiness, Mobilization and Deployment Processing)*, Army Regulation 600-8-101, (Washington, D.C. : US Department of the Army, 18 July 2003). p 10.

⁸ US Army Forces Command, "Mission Statement" 7 May 2004, Available from <<http://www.forscom.army.mil/cgwelcome/Mission030304.htm>>; Internet. accessed 11 December 2004.

⁹ HQDA Message DTG 102310Z JUN 04, Subj: Mobilization Station Requirement to Use DA Approved Software (Deployment and Reconstitution Tracking Software) (DARTS).

¹⁰ FORSCOM, "The Road Ahead- MOBLAS Results FORSCOM HQDA/FORSCOM Mobilization Seminar" 17 May 2001, available from <<https://freddie.forscom.army.mil>> Internet accessed 11 December 2004

¹¹ Human Resources Command, "General CAC Information Presentation" 22 October 2003, Available from <<https://www.perscomonline.army.mil/tagd/pssd/CAC>>. Internet. accessed 11 December 2004.

¹² Claire M. Levy et al., "Army PERSTEMPO in the Post Cold War Era." available from <<http://www.rand.org/publications/MR/MR1032>>, Internet; accessed 11 Dec 2004, 4

¹³ Human Resources Command, "PERSTEMPO- User Manual" Available from <<https://www.perscom.army.mil/perstempo/opproc/page1.htm>>. Internet. accessed 11 Dec 2004.

¹⁴ Army Human Resources Command. "PERSTEMPO Users Manual." Undated. Available from < <https://www.perscomonline.army.mil/perstempo/opproc/page1.htm>>. Internet. accessed 18 December 2004.

¹⁵ Army Human Resources Command. "eMILPO Update For Commanders and Leaders". Issue 2. 1st Qtr, FY 2005. Available from < https://www.perscomonline.army.mil/fsd/eMILPO_eXTRA_1st_QTR_FY05.doc>. Internet. accessed 18 December 2004. 3

¹⁶ Army Human Resources Command. "TPS Background." available from <<https://www.perscomonline.army.mil/fsd/TPS/bg.htm>>. Internet. accessed 2 Mar 2005.

¹⁷ Army Human Resources Command. "eMILPO Functional Guidance, Manual" Available from < <https://www.perscomonline.army.mil/fsd/emilpo1.htm>>. Internet. Accessed 18 Dec 2004. 165

¹⁸ Robert M. Nichols, "Executive Summary: Lessons Learned OIF: Automated Personnel Tracking." " 10 Jun 2003.

¹⁹ Sean J. Bryne, BG, "Operation Iraqi Freedom- Personnel Support Operations- 3d Personnel Command" briefing slides with notes, Personnel Leaders Conference, 22 Sep 2003.

²⁰ Nichols

²¹ Global Security Reports. "Army Company Information System (ARCIS)" undated. available from < <http://www.globalsecurity.org/intell/library/reports/2001/compendium/arcis.htm>> Internet. accessed 11 December 2004.

²² Army Human Resource System (AHRs)

²³ Teresa L. Campbell <teresa.campbell@us.army.mil>, "RE: AG School Personnel Automation," electronic mail message to COL Pat Devine <Pat-Devine@us.army.mil>, 15 Nov 2004

²⁴ Teresa L. Campbell <teresa.campbell@us.army.mil>, "RE: Tactical Personnel System," electronic mail message to COL Pat Devine <Pat-Devine@us.army.mil>, 4 Feb 2005.

²⁵ Jason Shock "Death to Desktops- The Advantages of Web Based Applications" 21 Feb 2004. available from <http://www.jasonshock.com/writings/dtd/desktop_3.php3>. Internet, accessed 12 Dec 2004.

²⁶ Ibid

²⁷ Alan Bundy, "One Essential Direction: Information Literacy, Information Technology Fluency" 30 May 2003. available from <www.Library.unisa.edu.au/about/papers/oneessential.htm>. Internet. accessed 10 December 2004.

²⁸ Tanya Avery, "Smart Cards: Big Time Punch in a Byte-Sized Package" undated, available from <http://www.quartermaster.army.mil/oqmg/Professional_Bulletin/1997/Winter/smartcard.html>. Internet. accessed 11 December 2004.

²⁹ Human Resources Command, The Army Adjutant General, Personnel Services Support Division. "Common Access Card (CAC) Fact Sheet" undated. available from <https://www.perscomonline.army.mil/tagd/pssd/psb/cac/general_cac_information.htm> Internet. accessed 11 Dec 2004.

- ³⁰ Army Human Resource System (AHRS)
- ³¹ TPS Users Manual, U.S. Army Adjutant General School
- ³² John R. Sclesenger, "Final Report of the Independent Panel to Review DOD Detention Operations " Washington D.C.: U.S. Department of the Defense. August 2004. 60
- ³³ Department of the Army. "Military Personnel Message No 04-321- AHRC-FSA-P- Elimination of DA Form 201, Military Personnel Records Jacket (MPRJ)- Phase III (Active Army Enlisted Records)- 23 November 2004, available from <<https://perscomnd04.army.mil/milpermsgs.nsf>>. Internet. accessed 18 December 2004.
- ³⁴ Army Human Resources Command. "eMILPO Functional Guidance, Manual" available from <<https://www.perscomonline.army.mil/fsd/emilpo1.htm>>. Internet. accessed 18 Dec 2004. 165
- ³⁵ Army Human Resources Command. "eMILPO Interim Change Package 2.0.3. Release Notes". 31 Jul 2004. available from <https://www.perscomonline.army.mil/fsd/release_notes_203.doc> Internet. accessed 18 December 2004.
- ³⁶ Army Human Resources Command. "eMILPO Functional Guidance, Manual" 165
- ³⁷ Rafael Santos <Rafael.Santos@SMDC-CS.ARMY.MIL>, "Quick Questions," electronic mail message to COL Pat Devine <Pat-Devine@us.army.mil>, 3 Jan 2005.
- ³⁸ Public Law 105-262, Section 8147, Defense Appropriation Act, 1999 105th Congress, 17 Oct 1998.
- ³⁹ DIMHRS Frequently Asked Questions, DIMHRS Homepage. available from <https://www.mpm.osd.mil/owa/jrio/pkg_jrio.page?id=D&wgsid=>>. Internet. accessed 18 December 2004.
- ⁴⁰ Lowell M. Cline, "Large Scale System Integration - The DIMHRS Program- A comparison to Industry Experience. available from <http://www.secure-biz.net/OSD2000/presentations/Technical%20Solutions/T12P%20-%2011_15AM%20TUE/cline/sld001.htm>. Internet. accessed 18 December 2004.
- ⁴¹ Alex Arlington <Alex.Arlington@us.army.mil>,"Quick Questions," electronic mail message to COL Pat Devine <Pat-Devine@us.army.mil>, 3 Feb 2005
- ⁴² Alex Arlington <Alex.Arlington@us.army.mil>,"Quick Questions," electronic mail message to COL Pat Devine <Pat-Devine@us.army.mil>, 3 Feb 2005
- ⁴³ Department of the Army, *Human Resource Doctrine*, Field Manual 1-0. **Initial Draft** Washington D.C.: U.S. Department of the Army, 10 November 2004, 2
- ⁴⁴ Department of the Army, *Personnel Doctrine*, Field Manual 12-6. Washington D.C.: U.S. Department of the Army, 9 September 1994, 1-4
- ⁴⁵ Department of the Army, *Human Resource Doctrine*, Field Manual 1-0. **Initial Draft** 4

GLOSSARY

ABCS:	Army Battle Command Systems
ACIPS:	Army Casualty Information Processing System
AG:	Adjutant General
AKO:	Army Knowledge on Line
AR:	Army Regulation
ARCIS:	Army Company Information System
ASORTS:	Army Status of Resources and Training System
CAC:	Common Access Card
CENTCOM:	Central Command
COTS:	Commercial Off the Shelf
DA:	Department of the Army
DARTS:	Deployment and Readiness Tracking System
DCIPS:	Defense Casualty Information Processing System
DFAS:	Defense Finance and Accounting Service
DIMHRS:	Defense Integrated Military Human Resources System
DOD:	Department of Defense
EDAS:	Enlisted Distribution and Assignment System
e-HRS:	Electronic Human Resources Systems
E-MILPO:	Electronic-Military Personnel Office
ERB:	Enlisted Records Brief
FORSCOM:	United States Army Forces Command
FM:	Field Manual
FY:	Fiscal Year
GATES:	Global Air Transportation Execution System
GPS:	Global Positioning Satellite
GTN:	Global Transportation Network
GWOT:	Global War on Terrorism
HR:	Human Resource
HRC:	United States Army Human Resources Command
HRS:	Human resource support
ICP:	Interim Change Package
ID:	Identification

INTERNET:	Interconnected Network
MARC:	Multitechnology Automated Reader Card
MOBLAS:	Mobilization Level Application Software
MPRJ:	Military Personnel Records Jacket
MTOE:	Modified Table of Organization and Authorization and Equipment
NCO:	Noncommissioned Officer
NDAA:	National Defense Authorization Act
NG:	National Guard
OEF:	Operation Enduring Freedom
OIF:	Operation Iraqi Freedom
ORB:	Officer Records Brief
PAI:	Personnel Asset Inventory
PCS:	Permanent Change of Station
PERMS:	Personnel Electronic Records Management System
PERSTEMPO:	Army Personnel Tempo
PSS:	Personnel Services Support
SIDPERS-3:	Standard Installation Personnel System- 3
SSN:	Social Security Number
SRP:	Soldier's Readiness Processing
TCS:	Temporary Change of Station
TF:	Task Force
TOS:	Top of the System
TPS:	Tactical Personnel System
TRANSCOM:	Department of Defense, Transportation Command
TTP:	Tactics, Techniques and Procedures
UIC:	Unit Identification Code
USAFMSA:	United States Army Force Management Support Agency
USR:	Unit Status Report
WRAP:	Warfighter Rapid Acquisition Program

BIBLIOGRAPHY

- Army Human Resource System (AHRS), Available from < <http://www.mit-kmi.com/articles.cfm?DocID=511#AHRS>>. Internet. Accessed 11 Dec 2004.
- Army Human Resources Command. "eMILPO Functional Guidance, Manual" Available from < <https://www.perscomonline.army.mil/fsd/emilpo1.htm>>. Internet. Accessed 18 Dec 2004.
- Army Human Resources Command. "eMILPO Interim Change Package 2.0.3. Release Notes". 31 Jul 2004. Available from <https://www.perscomonline.army.mil/fsd/release_notes_203.doc> Internet. Accessed 18 December 2004.
- Army Human Resources Command. "eMILPO Update For Commanders and Leaders". Issue 2. 1st Qtr, FY 2005. Available from < https://www.perscomonline.army.mil/fsd/eMILPO_eXTRA_1st_QTR_FY05.doc>. Internet. Accessed 18 December 2004. 3
- Army Human Resources Command. "PERSTEMPO Users Manual." Undated. Available from < <https://www.perscomonline.army.mil/perstempo/opproc/page1.htm>>. Internet. Accessed 18 December 2004.
- Avery, Tanya "Smart Cards: Big Time Punch in a Byte-Sized Package" undated, Available from <http://www.quartermaster.army.mil/oqmg/Professional_Bulletin/1997/Winter/smartcard.html>. Internet. Accessed 11 December 2004.
- Bundy, Alan "One Essential Direction: Information Literacy, Information Technology Fluency" 30 May 2003. Available from <www.Library.unisa.edu.au/about/papers/oneessential.htm>. Internet. Accessed 10 December 2004.
- Cline, Lowell M. "Large Scale System Integration- The DIMHRS Program- A comparison to Industry Experience. Available from < http://www.secure-biz.net/OSD2000/presentations/Technical%20Solutions/T12P%20-%2011_15AM%20TUE/cline/sld001.htm>. Internet. Accessed 18 December 2004.
- Department of the Army, Human Resource Doctrine, Field Manual 1-0. **Initial Draft** 4
- Department of the Army, Combat Service Support, Field Manual 4-0. Washington D.C.: U.S. Department of the Army, 29 Aug 2003
- Department of the Army, Personnel Doctrine, Field Manual 12-6. Washington D.C.: U.S. Department of the Army, 9 September 1994.
- Department of the Army, Human Resource Doctrine, Field Manual 1-0. **Initial Draft** Washington D.C.: U.S. Department of the Army, 10 November 2004, 2
- Department of the Army. "Military Personnel Message No 04-321- AHRC-FSA-P- Elimination of DA Form 201, Military Personnel Records Jacket (MPRJ)- Phase III (Active Army Enlisted Records)- 23 November 2004, Available from <<https://perscomnd04.army.mil/milpermsgsf.nsf>>. Internet. Accessed 18 December 2004.

Department of the Army, Personnel Processing (In-Out-, Soldiers Readiness, Mobilization and Deployment Processing, Army Regulation 600-8-101, Washington, D.C . : US Department of the Army, 18 July 2003.

DIMHRS Frequently Asked Questions, DIMHRS Homepage. Available from <https://www.mpm.osd.mil/owa/jrio/pkg_jrio.page?id=D&wgsid=>>. Internet. Accessed 18 December 2004.

FORSCOM, "The Road Ahead- MOBLAS Results FORSCOM HQDA/FORSCOM Mobilization Seminar" 17 May 2001, Available from <https://freddie.forscom.army.mil>; Internet Accessed 11 December 2004

Global Security Reports. "Army Company Information System (ARCIS)" undated. Available from < <http://www.globalsecurity.org/intell/library/reports/2001/compendium/arcis.htm> > Internet. Accessed 11 December 2004.

HQDA Message DTG 102310Z JUN 04, Subj: Mobilization Station Requirement to Use DA Approved Software (Deployment and Reconstitution Tracking Software) (DARTS).

HQDA Message DTG 091300Z April 2002, DAPE-MPE-DR, Subj: Personnel Tempo Tracking and Continued Reporting Requirements, 9 Apr 2002.

Human Resources Command, "General CAC Information Presentation" 22 October 2003, Available from <<https://www.perscomonline.army.mil/tagd/pssd/CAC>>. Internet. Accessed 11 December 2004.

Human Resources Command, "PERSTEMPO- User Manual" Available from <<https://www.perscom.army.mil/perstempo/opproc/page1.htm>>. Internet. Accessed 11 Dec 2004.

Human Resources Command, The Army Adjutant General, Personnel Services Support Division. "Common Access Card (CAC) Fact Sheet" undated. Available from <https://www.perscomonline.army.mil/tagd/pssd/psb/cac/general_cac_information.htm> Internet. Accessed 11 Dec 2004.

Levy, Claire M. et al., *Army PERSTEMPO in the Post Cold War Era*, Available from <http://www.rand.org/publications/MR/MR1032>, 11 Dec 2004, 4

Nichols, Robert M. "Executive Summary: Lessons Learned OIF: Automated Personnel Tracking. " 10 Jun 2003

Public Law 105-262, Section 8147, Defense Appropriation Act, 1999 105th Congress, 17 Oct 1998.

Schoomaker, Peter J. "Opening Statement before the Committee on Armed Services, U.S. Senate, July 29, 2003". Available from <<http://www.army.mil/leaders/CSA/testimony/29Jul03OpeningStatement.htm>>.Internet. Accessed 3 Dec 2004

Shock, Jason "Death to Desktops- The Advantages of Web Based Applications " 21 Feb 2004. Available from <http://www.jasonschock.com/writings/dtd/desktop_3.php3>. Internet, Accessed 12 Dec 2004.

Polsson, Ken "Chronology of Personal Computers," 19 Nov 2004, Available from
<<http://www.islandnet.com/~kpolsson/comphist/comp1972.htm>> Internet, Accessed
05 Dec 2004.

Sclesenger, John R. "Final Report of the Independent Panel to Review DOD Detention
Operations " Washington D.C.: U.S. Department of the Defense. August 2004.

Tiboni, Frank "Army Transformation Changes Direction", 13 Oct 2003, Available from
<<http://www.fcw.com/fcw/articles/2003/1013/cov-army-10-13-03.asp>>; Internet; Accessed
6 December 2004.

TPS Users Manual, U.S. Army Adjutant General School

US Army Forces Command, "Mission Statement" 7 May 2004, Available from
<<http://www.forscom.army.mil/cgwelcome/Mission030304.htm>>; Internet. Accessed
11 December 2004.

